WHAT IS CLAIMED IS:

1. An image reading apparatus for irradiating an original image with a light source and forming an image corresponding to the original image on an image sensing device through an imaging optical system to read the original image, comprising:

control means for shifting an ON start timing of the light source for illuminating the original image from a start timing of a predetermined charge storage period of the image sensing device.

2. The apparatus according to claim 1, wherein said control means controls a phase of a control pulse for driving the light source so as to shift the ON start timing of the light source.

3. The apparatus according to claim 2, wherein said control means generates the control pulse symmetrically with respect to a predetermined reference timing in the charge storage period along a time axis.

4. The apparatus according to claim 3, wherein said control means uses the reference timing as a central position of the charge storage period along the time axis.

5. The apparatus according to claim 3, wherein said control means uses the reference timing as a start timing or an end timing of the charge storage period.

6. The apparatus according to claim 3, wherein said

control means determines a start timing or an end timing of the control pulse in accordance with a duty ratio of the control pulse, that is determined by pulse-width modulation in accordance with the charge storage period and a magnitude of an output signal from the image sensing device, so as to generate the control pulse substantially symmetrically with respect to the reference timing along the time axis.

7. The apparatus according to claim 1, wherein the light source contains a plurality of color components.

8. The apparatus according to claim 7, wherein said control means causes the light source to emit the plurality of color components in accordance with the same control pulse.

9. The apparatus according to claim 7, wherein the plurality of color components have afterglow characteristics different from each other.

10. The apparatus according to claim 1, wherein the light source comprises a fluorescent lamp.

11. The apparatus according to claim 10, wherein a plurality of phosphors applied to an inner wall of a tube of the fluorescent lamp have afterglow characteristics different from each other.

12. The apparatus according to claim 1, wherein the image sensing device comprises a plurality of line sensors for reading images of different color

components.

13. The apparatus according to claim 1, wherein said control means controls a duty ratio of a control pulse by pulse-width modulation.

14. The apparatus according to claim 13, further comprising a memory storing relationships between phases and duty ratios of the control pulse, and

wherein said control means, in controlling the phase of the control pulse for driving the light source, adjusts the phase of the control pulse with reference to said memory in accordance with the duty ratio of the control pulse, which is determined by pulse-width modulation.

15. An image reading apparatus for irradiating an original image with a light source and forming an image corresponding to the original image on an image sensing device through an imaging optical system while scanning the original image in main and sub-scanning directions so as to read the original image, comprising:

control means for reducing barycenter movement of read positions of a plurality of color components in the sub-scanning direction, that is generated by afterglow characteristics of the plurality of color components contained in the light source for illuminating the original image.

16. The apparatus according to claim 15, wherein said

control means controls a phase of a control pulse for driving the light source so as to shift the ON start timing of the light source.

17. The apparatus according to claim 16, wherein said control means generates the control pulse symmetrically with respect to a predetermined reference timing in the charge storage period along a time axis.

18. The apparatus according to claim 17, wherein said control means uses the reference timing as a central position of the charge storage period along the time axis.

19. The apparatus according to claim 17, wherein said control means uses the reference timing as a start timing or an end timing of the charge storage period.

20. The apparatus according to claim 17, wherein said control means determines a start timing or an end timing of the control pulse in accordance with a duty ratio of the control pulse, that is determined by pulse-width modulation in accordance with the charge storage period and a magnitude of an output signal from the image sensing device, so as to generate the control pulse substantially symmetrically with respect to the reference timing along the time axis.

21. The apparatus according to claim 15, wherein the light source contains a plurality of color components.

22. The apparatus according to claim 21, wherein said

control means causes the light source to emit the plurality of color components in accordance with the same control pulse.

23. The apparatus according to claim 21, wherein the plurality of color components have afterglow characteristics different from each other.

24. The apparatus according to claim 15, wherein the light source comprises a fluorescent lamp.

25. The apparatus according to claim 24, wherein a plurality of phosphors applied to an inner wall of a tube of the fluorescent lamp have afterglow characteristics different from each other.

26. The apparatus according to claim 15, wherein the image sensing device comprises a plurality of line sensors for reading images of different color components.

27. The apparatus according to claim 15, wherein said control means controls a duty ratio of a control pulse by pulse-width modulation.

28. The apparatus according to claim 27, further comprising a memory storing relationships between phases and duty ratios of the control pulse, and

wherein said control means, in controlling the phase of the control pulse for driving the light source, adjusts the phase of the control pulse with reference to said memory in accordance with the duty ratio of the

control pulse, which is determined by pulse-width modulation.

29. An image reading apparatus having a white light source containing R (red), G (green), and B (blue) color components with afterglow characteristics different from each other, and line sensors of R, G, and B colors, which are laid out with an offset in a sub-scanning direction,

wherein the relative layout of the line sensors of R, G, and B colors is determined on the basis of the afterglow characteristics of the R, G, and B color components of the white light source.

30. The apparatus according to claim 29, wherein line sensors corresponding to two of the R, G, and B color components of the white light source, which have the largest difference in afterglow characteristics, are not laid out at two ends.

31. The apparatus according to claim 30, wherein line sensors corresponding to the R and G color components are laid out at two ends, and a line sensor corresponding to the B color component is laid out at a center.

32. The apparatus according to claim 29, further comprising:

a sensor for detecting a light amount of the white light source; and

dimming control means for controlling a current to be supplied to the white light source so as to hold the light amount detected by said sensor at a predetermined value.

33. The apparatus according to claim 32, wherein a control period of said dimming control means is in synchronism with a predetermined charge storage period of the line sensor.

34. The apparatus according to claim 29, wherein the white light source contains phosphors having afterglow characteristics different from each other and corresponding to the R, G, and B color components.

35. A dimming control method for a light source in an image reading apparatus for irradiating an original image with the light source and forming an image corresponding to the original image on an image sensing device through an imaging optical system to read the original image, comprising:

a control step of shifting an ON start timing of the light source for illuminating the original image from a start timing of a predetermined charge storage period of the image sensing device.

36. The method according to claim 35, wherein, in the control step, a phase of a control pulse for driving the light source is controlled so as to shift the ON start timing of the light source.

37. The method according to claim 36, wherein, in the control step, the control pulse is generated symmetrically with respect to a predetermined reference timing in the charge storage period along a time axis.

38. The method according to claim 37, wherein, in the control step, the reference timing is set at a central position of the charge storage period along the time axis.

39. The method according to claim 37, wherein, in the control step, the reference timing is set at a start timing or an end timing of the charge storage period.

40. The method according to claim 37, wherein, in the control step, a start timing or an end timing of the control pulse is determined in accordance with a duty ratio of the control pulse, that is determined by pulse-width modulation in accordance with the charge storage period and a magnitude of an output signal from the image sensing device, so as to generate the control pulse substantially symmetrically with respect to the reference timing along the time axis.

41. The method according to claim 35, wherein

the light source contains a plurality of color components, and

in the control step, the light source to emit the plurality of color components is emitted in accordance with the same control pulse.

42. The method according to claim 35, wherein, in the control step, a duty ratio of a control pulse is controlled by pulse-width modulation.

43. A dimming control method for a light source in an image reading apparatus for irradiating an original image with the light source and forming an image corresponding to the original image on an image sensing device through an imaging optical system while scanning the original image in main and sub-scanning directions so as to read the original image, comprising:

a control step of reducing barycenter movement of read positions of a plurality of color components in the sub-scanning direction, that is generated by afterglow characteristics of the plurality of color components contained in the light source for illuminating the original image.

44. The method according to claim 43, wherein, in the control step, a phase of a control pulse for driving the light source is controlled so as to shift the ON start timing of the light source.

45. The method according to claim 44, wherein, in the control step, the control pulse is generated symmetrically with respect to a predetermined reference timing in the charge storage period along a time axis.

46. The method according to claim 45, wherein, in the control step, the reference timing is set at a central

position of the charge storage period along the time axis.

47. The method according to claim 45, wherein, in the control step, the reference timing is set at a start timing or an end timing of the charge storage period.

48. The method according to claim 45, wherein, in the control step, a start timing or an end timing of the control pulse is determined in accordance with a duty ratio of the control pulse, that is determined by pulse-width modulation in accordance with the charge storage period and a magnitude of an output signal from the image sensing device, so as to generate the control pulse substantially symmetrically with respect to the reference timing along the time axis.

49. The method according to claim 43, wherein

the light source contains a plurality of color components, and

in the control step, the light source to emit the plurality of color components is emitted in accordance with the same control pulse.

50. The method according to claim 43, wherein, in the control step, a duty ratio of a control pulse is controlled by pulse-width modulation.

51. A line sensor layout method in an image reading apparatus having a white light source containing R (red), G (green), and B (blue) color components with

afterglow characteristics different from each other, and line sensors of R, G, and B colors, which are laid out with an offset in a sub-scanning direction, wherein

a relative layout of the line sensors of R, G, and B colors is determined on the basis of the afterglow characteristics of the R, G, and B color components of the white light source.

52. The method according to claim 51, wherein the line sensors corresponding to two of the R, G, and B color components of the white light source, which have the largest difference in afterglow characteristics, are not laid out at two ends.

53. The method according to claim 51, wherein the line sensors corresponding to the R and G color components are laid out at tow ends, and a line sensor corresponding to the B color component is laid out at a center.